



Marin Environmental, Inc.

Hydrogeology, Engineering & GIS Services

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8 September 1998

Mr. Gaston Riendeau
R3 PO Box 497-B
Swanton, VT 05488

Re: *Monitoring Well Installation, Soil and Ground Water Sampling,
Floor Drain Closure, and Waste Drum Sampling
Monty's Repair Shop, Swanton, VT* 98-2464

Dear Gaston:

On 21 and 24 August 1998 Marin Environmental Inc. (Marin) completed the installation of temporary monitoring wells, sampling of soil and ground water, closure of the on-site floor drain, and sampling of discarded waste drums at Monty's Repair Shop located on Highgate Road in Swanton, Vermont (Figure 1). Results of the additional work did not suggest that significant environmental conditions exist at the site. This work was initiated following a review of a Phase I Environmental Site Assessment and supplemental surface and ground-water sampling and soil gas survey by Mr. John Schmeltzer of Vermont Department of Environmental Conservation (DEC). The findings of this work are summarized as follows:

1. Results of ground-water sampling at newly installed temporary monitoring wells downgradient of the on-site floor drain indicate non-detectable concentrations of volatile organic compounds (VOCs) by EPA Method 8260.
2. After its contents were purged, the on-site floor drain was cleaned and sealed with bentonite and concrete to prevent any future releases to the subsurface. All wastes generated by the closure activities were drummed and properly disposed by Heritage Environmental Services of Williston, Vermont.
3. Results of soil sampling in the area south of the garage which was previously covered by a garbage dumpster revealed total petroleum hydrocarbons (TPH) at concentrations of 36,700 parts per million (ppm) by modified EPA Method 8100 and low levels of priority metals by EPA Method 3050. Inspection of the chromatogram from the TPH analysis did not, however, indicate the presence of a typically utilized petroleum product. The main constituents of gunpowder are potassium nitrate, charcoal, and sulfur. The VT DEC has established a TPH guideline of 1,000 ppm for closure of petroleum contaminated soils. Of the thirteen metals analyzed, only beryllium exceeded the EPA Risk Based Standard for residential soil ingestion with a concentration of 0.480 parts per million (ppm). The Risk Based Standard for beryllium is 0.15 ppm.
4. Results of sampling four waste-oil drums by EPA SW-846 Method 9077 using the Chlor-D-Tect ® Q4000 field test kit revealed non-detectable concentrations of total chlorine below 200 parts per million. A total of six

Mr. Gaston Riendeau
Monty's Repair Shop

8 September 1998
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drums were previously delivered from Monty's Repair Shop to Hodgdon's Brothers Salvage in Swanton, Vermont for use in a waste-oil furnace.

Based on these results, Marin recommends no further action at the site.

On 24 August 1998 four temporary monitoring wells were installed in the area northeast and downgradient of the on-site floor drain (Figure 3). The wells were installed by pre-probing a ¼" hole with a Bosch SDS-Max hammer drill and KVA Hefty soil-gas rods. Refusal was encountered at all three well locations at a depth of approximately 7.5 feet below ground surface (bgs). A hand-slotted ½" PVC well was then inserted into the pre-probed hole and backfilled with native material. Ground water in the unconfined surficial aquifer directly beneath the site appears to be flowing in an northeasterly direction. Water-level measurements and elevation calculations for 31 August 1998 are presented in Table 1. The ground-water contour map in Figure 3 was prepared using this data.

TABLE 1. Ground-Water Elevation Data

Well ID	Top of Casing Elevation	Depth of Well (feet, TOC)	Depth to Water (feet, TOC)	Ground Water Elevation
MW-1	100.00	5.17	4.81	95.19
MW-2	99.57	6.67	4.89	94.68
MW-3	99.00	7.25	4.94	94.06

Results of ground-water sampling indicate non-detectable concentrations of VOCs by EPA Method 8260 in all three wells. Each monitoring well was sampled using 5/16" vinyl tubing by applying a vacuum and evacuating water directly to the sample container. The ground water samples were submitted to Endyne, Inc. of Williston, Vermont.

The on-site floor drain was cleaned and sealed on 21 August 1998. Approximately 70 gallons of liquid and sludge were removed from the floor drain with a trash pump, and placed in 55 gallon drums. The floor drain was rinsed twice with tap water to remove nearly all the residual sludge in the drain. The bottom of the floor drain was a very hard surface and is believed to be bedrock. A confirmatory sample was not collected from the cleaned drain due to small amounts of sludge remaining on bedrock surface that could not be removed with the trash pump or shovel. During closure activities, a previously unidentified drainage pipe was discovered in the floor drain. The 3" PVC pipe apparently served as a discharge to native material outside the garage foundation and is not believed to be connected to any other wastewater disposal lines. The pipe was located below the ground-water level in the floor drain, discharging to the north, and was not observed until after the contents of the drain were removed. The floor drain was sealed with approximately 1.5 feet of bentonite followed by approximately three feet of clean native material and a one foot concrete seal cap. Bentonite was also placed in the drainage pipe to prevent groundwater influx to the closed floor drain. All wastes generated by the closure activities were drummed and properly disposed by Heritage Environmental Services of Williston, Vermont.

Mr. Gaston Riendeau
Monty's Repair Shop

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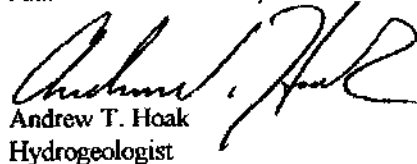
A soil sample was also collected in the area of the on-site soil staining south of the garage previously covered by a garbage dumpster in order to determine the nature of contamination. The staining appeared to consist of a thin layer of black material with a "cakey" consistency. It was reported by the current site owner, Theresa Jarvis, that gun powder was discarded in the dumpster and may have resulted in the observed staining. Examination of the soil staining revealed only surface discoloration and did not support the presence of a waste-oil release. Results of soil sampling revealed total petroleum hydrocarbons (TPH) at concentrations of 36,700 parts per million (ppm) by modified EPA Method 8100 and low levels of priority metals by EPA Method 3050. Inspection of the chromatogram from the TPH analysis does not, however, indicate the presence of typically utilized petroleum products. The main constituents of gunpowder are potassium nitrate, charcoal, and sulfur. Charcoal, which is a product of incomplete wood combustion, likely contains high concentrations of polycyclic aromatic hydrocarbons (PAHs); PAHs, in turn, are compounds that would cause elevated TPH results. The VT DEC has established a TPH guideline of 1,000 ppm for closure of petroleum contaminated soils. Of the thirteen metals analyzed, only beryllium exceeded of the EPA Risk Based Standard for residential soil ingestion with a concentration of 0.480 parts per million (ppm). The Risk Based Standard for beryllium is 0.15 ppm.

On 21 August 1998 four of six waste-oil drums delivered to Hodgdon Brothers Salvage from Monty's Repair Shop were sampled to further characterize their contents and assess potential impacts to the subject parcel. The drums were not labeled and were identified by Elmer Hodgdon as being the ones delivered by Monty's Repair shop. A single 40 milliliter glass vial was filled with the waste oil from each drum and sealed with no head space for analysis on 2 September 1998. The oil in all four drums had a light amber appearance unlike used motor oil. Results of drum sampling by EPA SW-846 Method 9077 using the Chlor-D-Tect @ Q4000 field test kit revealed non-detectable concentrations of total chlorine below 200 parts per million.

Please call me if you have any questions or concerns about this work.

Sincerely,

Marin Environmental, Inc.

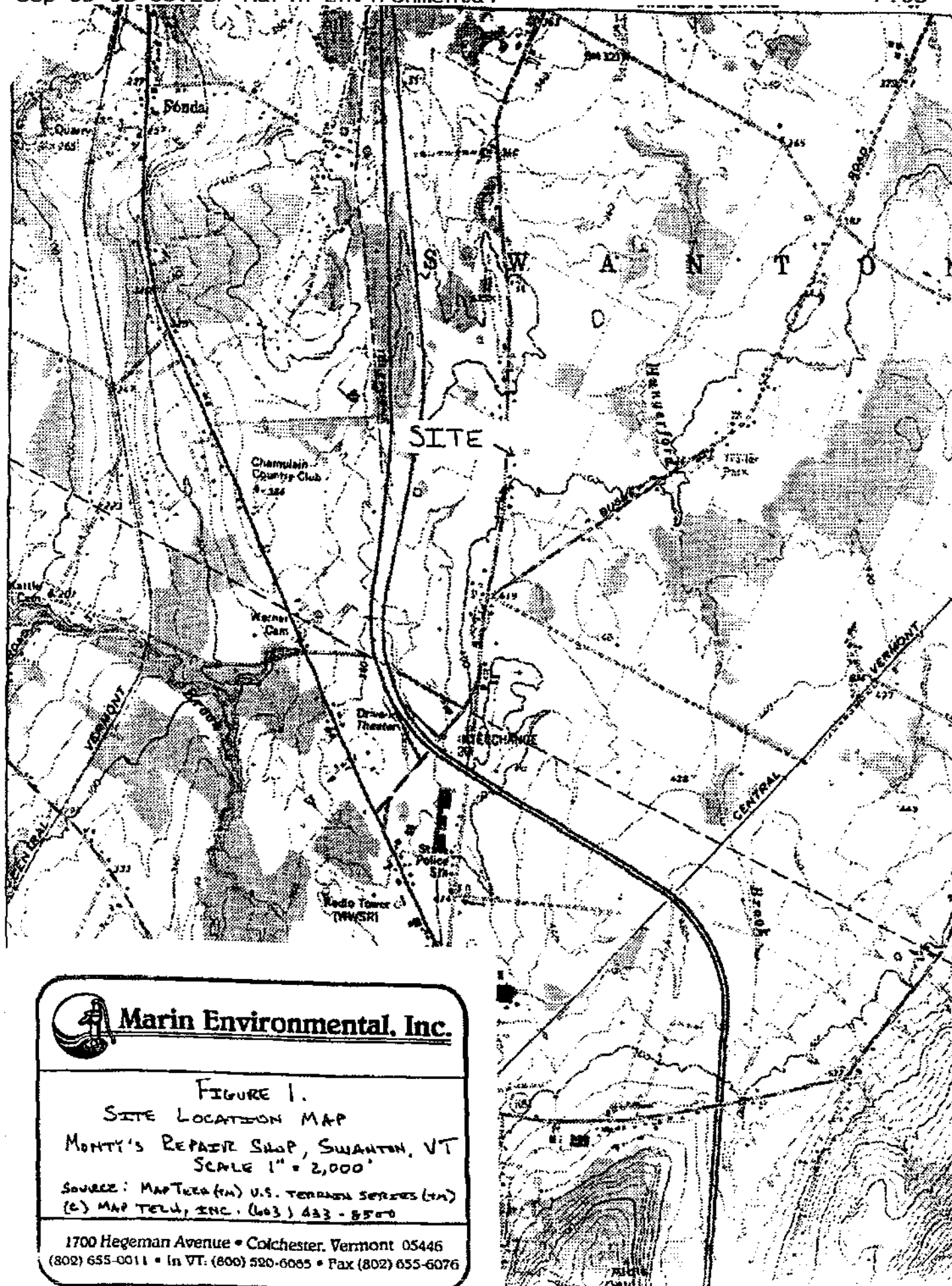


Andrew T. Hoak
Hydrogeologist

cc: Jack Jenkins, Franklin Lamoille Bank
John Schmeltzer, VT DEC
George E. Spear

Attachments

ATH/Ref: 98044107.doc



Marin Environmental, Inc.

FIGURE 1.

SITE LOCATION MAP

MONTY'S REPAIR SHOP, SWANTON, VT
SCALE 1" = 2,000'

SOURCE: MAPTECH (TM) U.S. TERRAIN SERIES (TM)
(C) MAPTECH, INC. (403) 433-8500

1700 Hegeman Avenue • Colchester, Vermont 05446
(802) 655-0011 • In VT: (800) 520-6065 • Fax (802) 655-6076



Marin Environmental, Inc.

1700 Hegeman Avenue
Colchester, VT 05446

PREPARED
BY
ATH

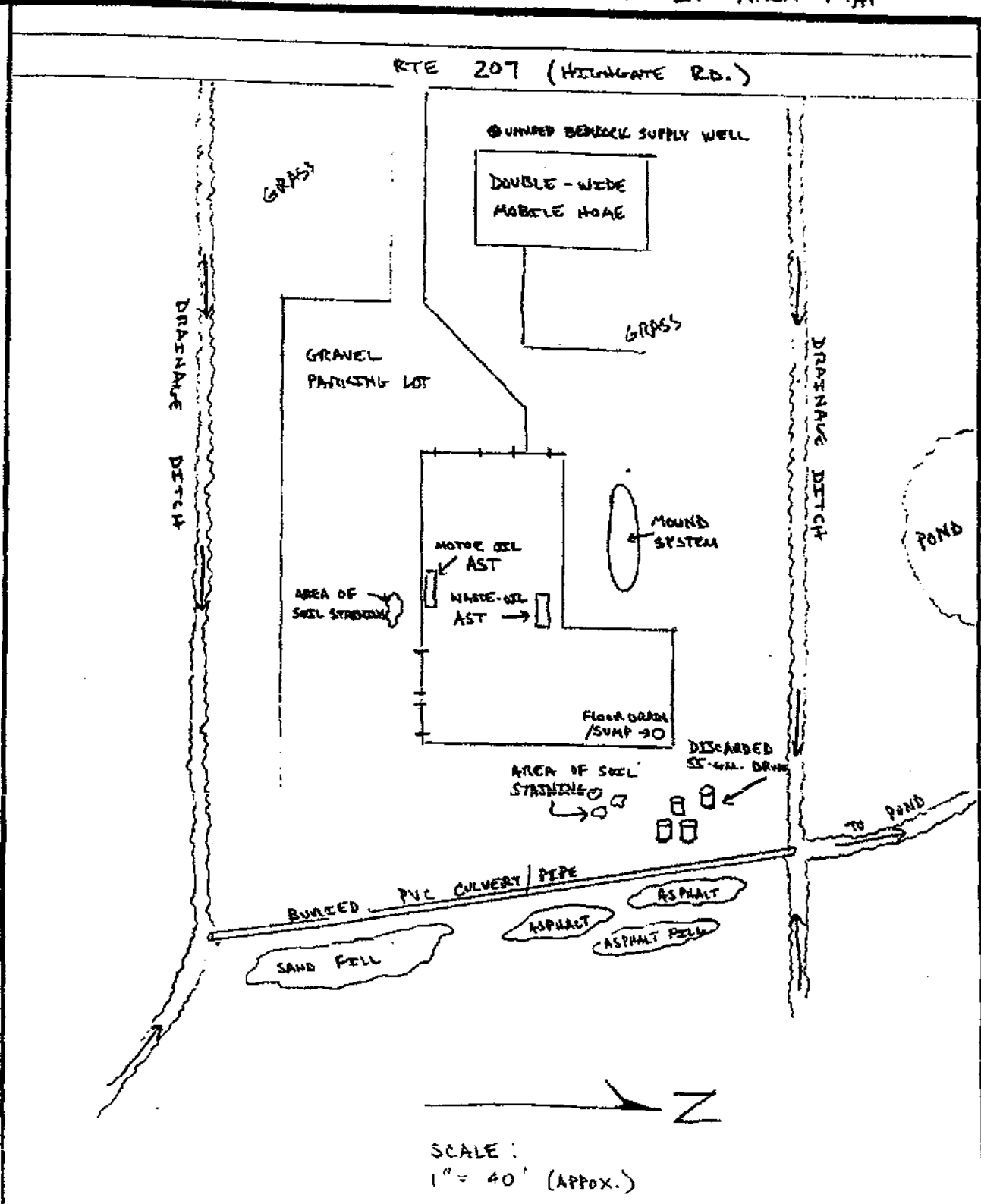
DATE
6/1/98

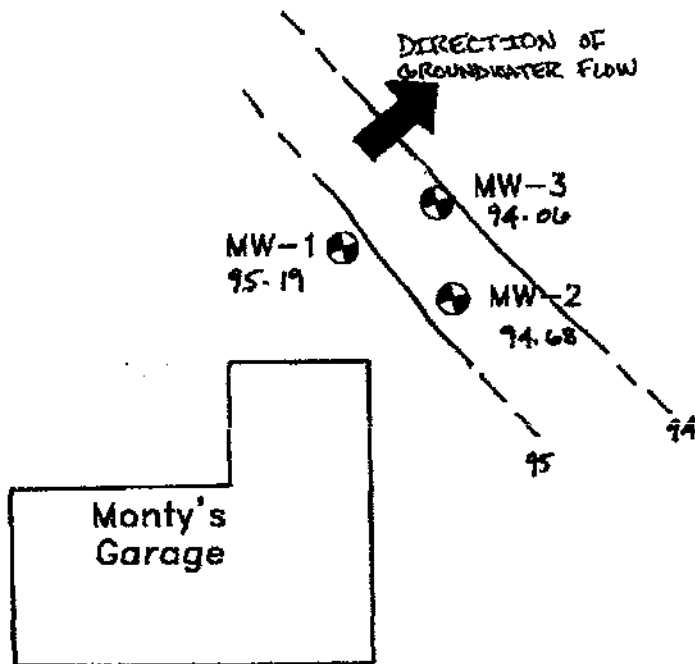
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BY

DATE



PROJECT
NO.

SUBJECT: MONTY'S REPAIR SHOP - FIGURE 2. AREA MAP





ALL LOCATIONS ARE APPROXIMATE

 Marin Environmental, Inc. 1700 Hageman Ave. Colchester, VT 05446 (802) 655-0011	
SITE: MONTY'S REPAIR SHOP SWANTON, VT	
TITLE: FIGURE 3. GROUNDWATER CONTOUR MAP	
LEGEND:  Proposed Monitoring Well	
DRAWN BY: MJB	DATE: AUG 98
APPROVED BY: ATH	FILE No.: 980044sp



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Marin Environmental
PROJECT NAME: Monty's Repair Shop
REPORT DATE: August 27, 1998
DATE SAMPLED: August 24, 1998
DATE RECEIVED: August 25, 1998
ANALYSIS DATE: August 27, 1998

PROJECT CODE: GWVT1405
REF.#: 126,040
STATION: MW - 2
TIME SAMPLED: 3:00
SAMPLER: A. Hoak

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	1	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2,4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 9

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 97.9%
Toluene-d8 : 95.5%
4-Bromofluorobenzene : 96.6%

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Marin Environmental
PROJECT NAME: Monty's Repair Shop
REPORT DATE: August 27, 1998
DATE SAMPLED: August 24, 1998
DATE RECEIVED: August 25, 1998
ANALYSIS DATE: August 26, 1998

PROJECT CODE: GWVT1405
REF #: 126,039
STATION: MW - 1
TIME SAMPLED: 2:45
SAMPLER: A. Hawk

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND ¹	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	1	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2,4,4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 98. %
Toluene-d8 : 91. %
4-Bromofluorobenzene : 94. %

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
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LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Marin Environmental
PROJECT NAME: Monty's Repair Shop
REPORT DATE: August 27, 1998
DATE SAMPLED: August 24, 1998
DATE RECEIVED: August 25, 1998
ANALYSIS DATE: August 27, 1998

PROJECT CODE: GWVT1405
REF.#: 126,041
STATION: MW - 3
TIME SAMPLED: 3:15
SAMPLER: A. Hoak

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	1	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2,4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 95. %
Toluene-d8 : 118. %
4-Bromofluorobenzene : 97. %

NOTES:

1 None detected

**ENDYNE, INC.****Laboratory Services**

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Marin Environmental
PROJECT NAME: Monty's Repair Shop
REPORT DATE: September 8, 1998
DATE SAMPLED: August 24, 1998
DATE RECEIVED: August 25, 1998

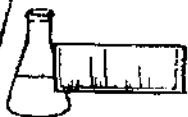
PROJECT CODE: GWVT3407
REF. #: 126,043
STATION: Gunpowder Stain
TIME SAMPLED: 14:30
SAMPLER: A. Hoak

Digestion was performed by EPA Method 3050.

<u>Parameter</u>	<u>Concentration</u> <u>(mg/kg, dry wt.)</u>	<u>Reporting Limit</u> <u>(mg/kg, dry wt.)</u>	<u>Analytical Method</u>	<u>Analysis Date</u>
Total Antimony	ND ¹	0.238	SM 3113B	8/28/98
Total Arsenic	5.90	0.594	SM 3113B	9/3/98
Total Beryllium	0.480	0.238	EPA 200.7	8/28/98
Total Cadmium	1.49	0.238	EPA 200.7	8/28/98
Total Chromium	9.83	0.475	EPA 200.7	8/28/98
Total Copper	17.1	0.475	EPA 200.7	8/28/98
Total Lead	19.2	2.38	EPA 200.7	8/28/98
Total Mercury	ND	0.188	EPA 245.5	9/4/98
Total Nickel	15.4	0.475	EPA 200.7	8/28/98
Total Selenium	ND	1.18	SM 3113B	8/31/98
Total Silver	ND	0.475	EPA 200.7	8/28/98
Total Thallium	ND	0.119	SM 3113B	9/1/98
Total Zinc	262.	0.475	EPA 200.7	8/28/98

NOTES:

1 None Detected

**ENDYNE, INC.****Laboratory Services**

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT**TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100**

DATE: September 8, 1998
CLIENT: Marin Environmental
PROJECT: Monty's Repair Shop
PROJECT CODE: GWVT1406
COLLECTED BY: A. Hoak
DATE SAMPLED: August 21, 1998
DATE RECEIVED: August 25, 1998

Reference #	Sample ID	Concentration (mg/kg) ¹
126,042	Gunpowder Stain; 2:30	36,700.

Notes:

- 1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 5.0 mg/kg.